

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Denenberg *et al.* Art Unit : 2626
Assignee : Comverse Network Systems, Inc. Examiner : Angela A. Armstrong
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Title : METHOD AND SYSTEM FOR MODIFYING THE BEHAVIOR OF AN
APPLICATION BASED UPON THE APPLICATION'S GRAMMAR

MAIL STOP APPEAL BRIEF – PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF ON BEHALF OF
LAWRENCE A. DENENBERG CHRISTOPHER M. SCHMANDT

The fees in the amount of \$540 are being paid concurrently on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

(i.) Real Party In Interest

The real party in interest in the above application is **Comverse Network Systems, Inc.**

(ii.) Related Appeals and Interferences

The Appellant is not aware of any appeals or interferences related to the above-identified patent application.

(iii.) Status of Claims

This is an appeal from the decision of the Primary Examiner in a Final Office Action dated June 27, 2008, rejecting claims 1, 3, 4, 6-11, 13, 16, 17, 35, 37-44, 64, 65, 69, 70, 75, 77-79, 82 and 84-89. Claims 2, 5, 12, 14-15, 18-34, 36, 45-63, 66-68, 71-74, 76, 80-81, 83 and 90-133 are cancelled. The pending claims have been twice rejected. Claims 1, 3, 4, 6-11, 13, 16, 17, 35, 37-44, 64, 65, 69, 70, 75, 77-79, 82 and 84-89 are the subject of this appeal.

(iv.) Status of Amendments

All amendments have been entered. Appellant has filed a Notice of Appeal on October 24, 2008.

(v.) Summary of Claimed Subject Matter

Background

The claimed invention relates to modifying the way a user can interact with an application as a function of an analysis of the expected user responses or inputs (e.g. grammars) to the application. [Specification, page 2, lines 12-14]

Appellant's Invention

Claim 1

One aspect of Appellant's invention is set out in claim 1 as a speech recognition apparatus. "The voice application platform receives content from a website or an application and

presents the content to the user in the form of an audio prompt, either by playing back an audio file or by speech synthesis, such as that generated by text-to-speech synthesis. The voice application platform also gathers user responses and choices using speech recognition or touch tone (DTMF) decoding.” **[Specification, page 3, lines 3-7]**. Also, “FIG. 2 shows a diagrammatic view of a system 200 providing voice application platform 210 in accordance with the present invention. The voice application platform 210 includes a DTMF and speech recognition unit 212, optionally, a text-to-speech (TTS) engine 214, and a command processing unit 215.” **[Specification, page 17, lines 8-11]**

An inventive feature of Appellant's claim 1 includes a first application configured to output a grammar in a form to be used by a speech recognizer, and to receive a user selection associated with the grammar. “FIG. 2 shows a diagrammatic view of a system 200 providing voice application platform 210 in accordance with the present invention. The voice application platform 210 includes a DTMF and speech recognition unit 212, optionally, a text-to-speech (TTS) engine 214, and a command processing unit 215.” **[Specification, page 17, lines 8-11]** Additionally, “[t]he command processing unit 215 can include an input processing unit 216 adapted to process the inputs or grammars received from the remote application 232 ...” **[Specification, page 19, lines 18-19]** And, “[t]he input processing unit 216 can be further adapted to associate a set of user responses and an action to be performed for each user response or an indication of a conflict between a voice user interface or voice browser response and a remote application response. Thus, for example, if the user response is one of the responses specified by the original grammar provided by the remote application 232, the associated action can be to send the response to the remote application 232, whereas if the response is, for example, also a voice user interface command or a voice browser command such as “help” or “quit,” the associated action can be to execute the appropriate voice user interface or browser process or function to resolve the conflict.” **[Specification, page 23, line 15, to page 24, line 3]**

Furthermore, Appellant's FIG. 2 depicts a system 200 that includes the remote application 232 (e.g., the first application) that, as indicated above provides to the voice

application platform input (e.g., grammar) and receives results (e.g., the user selection associated with the grammar):

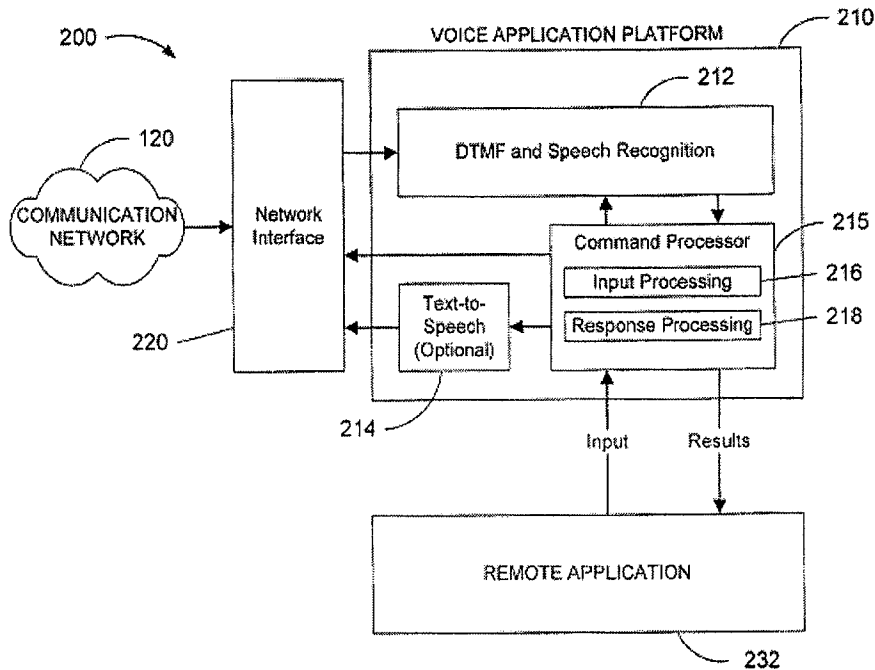


FIG. 2

A further inventive feature of Appellant's claim 1 includes a voice application platform adapted to receive a speech input and to receive the grammar from the first application, and to output the user selection to the first application. "FIG. 2 shows a diagrammatic view of a system 200 providing voice application platform 210 in accordance with the present invention. The voice application platform 210 includes a DTMF and speech recognition unit 212, optionally, a text-to-speech (TTS) engine 214, and a command processing unit 215." [Specification, page 17, lines 8-11] Additionally, "[t]he command processing unit 215 can include an input processing unit 216 adapted to process the inputs or grammars received from the remote application 232 ..." [Specification, page 19, lines 18-19] And, "[t]he command processing unit 215 is adapted for

receiving input data from the application and sending responses to the application”

[Specification, page 20, lines 1-2]

Yet another inventive feature of Appellant's claim 1 includes the voice application platform including a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic. “The command processing unit 215 is adapted for receiving input data from the application and sending responses to the application. The input data, typically includes the grammar or other representation of the acceptable responses from the user and the prompt, either in the form of a digital audio data file or a text file for TTS synthesis. The input processing unit 216 receives the input data and separates the grammar from the prompt. The grammar can be analyzed to determine specific characteristics or attributes of its content in order to enable the command processing unit 215 to determine or make assumptions about the response that the application or web site is expecting.”

[Specification, page 20, lines 1-8] Also, “The input processing unit 216 can also be adapted to modify an existing grammar by adding additional phrases or terms that can be recognized or substituting one or more terms or phrases for one or more other terms or phrases in the original grammar. The input processing unit 216 can be further adapted to associate a set of user responses and an action to be performed for each user response or an indication of a conflict between a voice user interface or voice browser response and a remote application response.”

[Specification, page 23, lines 15-20] “In another example, the voice application platform can include a database of synonyms or a thesaurus and where the grammar is determined to include one or more words that are found in the database or the thesaurus, the input processing unit 216 can add the appropriate synonyms to the grammar before it is forwarded to the speech recognition unit 212 ...” **[Specification, page 20, lines 17-21]** See also the input processing element 216 depicted in FIG. 2.

A further inventive feature of Appellant's claim 1 includes a speech recognizer coupled to the processor and configured to interpret the speech input as a function of the modified grammar, and to produce the user selection. “The voice application platform 210 includes a

DTMF and speech recognition unit 212” **[Specification, page 17, lines 9-10]** “Typically, the speech recognition unit 212 will be based upon an a language model or recognition paradigm that enables the recognizer to determine which words were spoken. Depending upon the language model or paradigm, the speech recognition unit may require an input that facilitates the recognition process. The input typically reduces the number of words the recognizer needs to recognize in order improve recognition performance. For example, the most common recognizers are constrained by an input, commonly referred to as a grammar. A grammar is a terse and partially symbolic representation of all the words which the recognizer should understand and orders (syntax) in which the words can be combined (during the recognition period for a single dialog).” **[Specification, page 18, lines 3-11]** “In another example, the voice application platform can include a database of synonyms or a thesaurus and where the grammar is determined to include one or more words that are found in the database or the thesaurus, the input processing unit 216 can add the appropriate synonyms to the grammar before it is forwarded to the speech recognition unit 212 ...” **[Specification, page 20, lines 17-21]** “The response processing unit 218 can include software or a combination of hardware and software that are adapted to compare the user response (as interpreted by the speech recognition unit 212) with the list of responses produced by the input processing unit 216.” **[Specification, page 24, line 21 to page 25, line 1]**

Appellant's claim 1 also includes the inventive feature wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar. “The command processing unit 215 is adapted for receiving input data from the application and sending responses to the application. The input data, typically includes the grammar or other representation of the acceptable responses from the user and the prompt, either in the from of a digital audio data file or a text file for TTS synthesis. The input processing unit 216 receives the input data and separates the grammar from the prompt.” **[Specification, page 20, lines 1-5]** Also, as noted, “The input processing unit 216 can also be adapted to modify an existing grammar by adding additional phrases or terms that can be recognized or substituting one or more terms or phrases for one or more other terms or phrases in

the original grammar. The input processing unit 216 can be further adapted to associate a set of user responses and an action to be performed for each user response or an indication of a conflict between a voice user interface or voice browser response and a remote application response.”

[Specification, page 23, lines 15-20] Accordingly, the input processing modifies the grammar and other representation of acceptable responses to add to that vocabulary modified acceptable responses. The modified grammar would thus include acceptable responses that were not in the list before the processing performed by the input processing unit.

Claim 35

Claim 35 recites another aspect of the invention. Claim 35 is a computer readable medium having computer-executable instructions for performing a method of providing a user interface. “FIG. 1 shows a diagrammatic view of a voice based system 100 for accessing applications in accordance with the present invention. The system 100 can include a voice application platform 110 [similar to the voice application platform 210 of FIG. 2] coupled to one or more remote application and/or web servers 130 [similar to the remote first application 232 of FIG. 2] via a communication network 120, such as the Internet, and coupled to one or more terminals, such as a computer 152, a telephone 154 and a mobile device (PDA and/or telephone) 156 via network 120.” **[Specification, page 12, lines 14-19]** “The DTMF and speech recognition unit 212, the text-to-speech (TTS) engine 214, and a command processing unit 215 can be implemented in software, a combination of hardware and software or hardware on the voice application platform computer.” **[Specification, page 17, lines 15-17]**

An inventive feature of Appellant's claim 35 includes receiving a first grammar in a form to be used by a speech recognizer from an application, the first grammar including information representative of a first set of responses expected to be received by the application. “The command processing unit 215 is adapted for receiving input data from the application and sending responses to the application. The input data, typically includes the grammar or other representation of the acceptable responses from the user and the prompt, either in the form of a

digital audio data file or a text file for TTS synthesis. The input processing unit 216 receives the input data and separates the grammar from the prompt.” **[Specification, page 20, lines 1-5]**

A further inventive feature of Appellant's claim 35 includes analyzing the first grammar to identify a characteristic prior to receiving the first set of responses. “The input processing unit 216 receives the input data and separates the grammar from the prompt. The grammar can be analyzed to determine specific characteristics or attributes of its content in order to enable the command processing unit 215 to determine or make assumptions about the response that the application or web site is expecting. If the prompt is a text file for TTS synthesis, the text file can be analyzed to determine specific characteristics or attributes of the content that enable the command processing unit 215 to determine or make assumptions about the response that the application or web site is expecting.” **[Specification, page 20, lines 4-11]** “In another example, the voice application platform can include a database of synonyms or a thesaurus and where the grammar is determined to include one or more words that are found in the database or the thesaurus, the input processing unit 216 can add the appropriate synonyms to the grammar before it is forwarded to the speech recognition unit 212 ...” **[Specification, page 20, lines 17-21]**
Also, FIG. 3 depicts an exemplary procedure to provide a user interface:

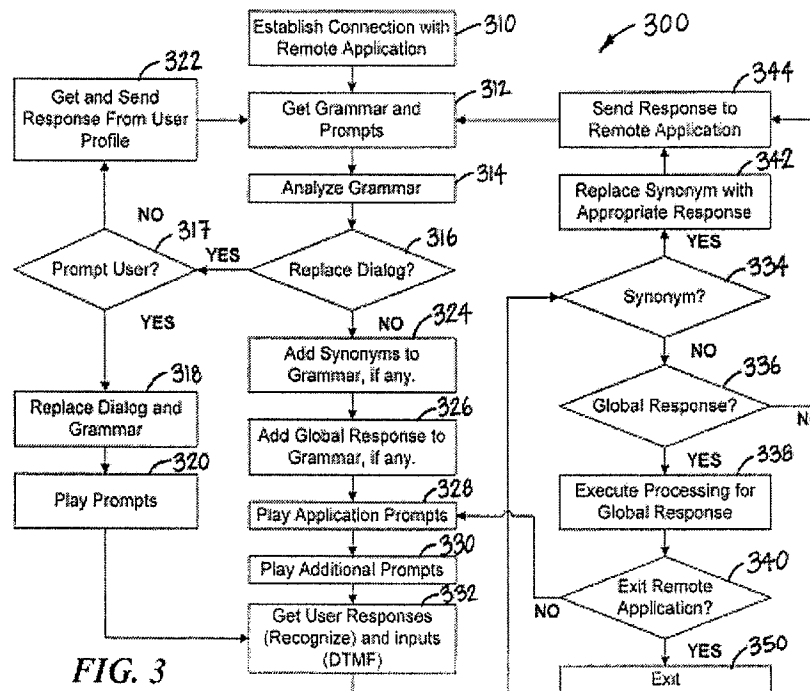


FIG. 3

As explained in reference to FIG. 3, “[i]n the illustrative embodiment, the remote application is adapted to send prompts and grammars to the voice application platform, however it is not necessary for the voice application platform to use a grammar. The process 300, in accordance with invention, includes establishing a connection with the application at step 310, either directly (such as where the application is local) or over a network, receiving input from the application at step 312. Typically, the input includes at least one prompt and one grammar. The process 300 further includes analyzing the grammar at step 314. The analyzing step 314 includes determining one or more characteristics of the response expected by the remote application in order to implement one or more modifications to the way the user can interact with the remote application. This can be accomplished by analyzing the grammar or the prompt (e.g. TTS based

prompts) or both to determine the type or character of information requested by the prompt (e.g. a credit card number or expiration date) or the set of possible responses the user can input in response to the prompt (e.g. number strings and date terms).” **[Specification, page 28, line 20, to page 29, line 10]**

Yet another inventive feature of Appellant's claim 35 includes modifying the first grammar as a function of the characteristic to produce a second grammar representative of a second set of responses, wherein at least a portion of the second set of responses are not included in the first set of responses. “The input processing unit 216 can also be adapted to modify an existing grammar by adding additional phrases or terms that can be recognized or substituting one or more terms or phrases for one or more other terms or phrases in the original grammar. The input processing unit 216 can be further adapted to associate a set of user responses and an action to be performed for each user response or an indication of a conflict between a voice user interface or voice browser response and a remote application response.” **[Specification, page 23, lines 15-20]** “The process 300 further includes analyzing the grammar at step 314. The analyzing step 314 includes determining one or more characteristics of the response expected by the remote application in order to implement one or more modifications to the way the user can interact with the remote application. This can be accomplished by analyzing the grammar or the prompt (e.g. TTS based prompts) or both to determine the type or character of information requested by the prompt (e.g. a credit card number or expiration date) or the set of possible responses the user can input in response to the prompt (e.g. number strings and date terms).” **[Specification, page 29, lines 4-10]**

Appellant's claim 35 also includes the inventive feature interpreting a user's voice input based on the second grammar. "The command processing unit 215 is adapted for receiving input data from the application and sending responses to the application. The input data, typically includes the grammar or other representation of the acceptable responses from the user and the prompt, either in the form of a digital audio data file or a text file for TTS synthesis. The input processing unit 216 receives the input data and separates the grammar from the prompt."

[Specification, page 20, lines 1-5] Also, as noted, "The input processing unit 216 can also be adapted to modify an existing grammar by adding additional phrases or terms that can be recognized or substituting one or more terms or phrases for one or more other terms or phrases in the original grammar. The input processing unit 216 can be further adapted to associate a set of user responses and an action to be performed for each user response or an indication of a conflict between a voice user interface or voice browser response and a remote application response."

[Specification, page 23, lines 15-20] Accordingly, the input processing modifies the grammar and other representation of acceptable responses to add to that vocabulary modified acceptable responses. The modified grammar would thus include acceptable responses that were not in the list before the processing performed by the input processing unit.

Claim 75

Claim 75 recites another aspect of the invention. Claim 75 is a computer readable medium having computer-executable instructions for performing a method of providing a user interface. "FIG. 1 shows a diagrammatic view of a voice based system 100 for accessing

applications in accordance with the present invention. The system 100 can include a voice application platform 110 [corresponding to the voice application platform 210 of FIG. 2] coupled to one or more remote application and/or web servers 130 via a communication network 120, such as the Internet, and coupled to one or more terminals, such as a computer 152, a telephone 154 and a mobile device (PDA and/or telephone) 156 via network 120.”

[Specification, page 12, lines 14-19] “The DTMF and speech recognition unit 212, the text-to-speech (TTS) engine 214, and a command processing unit 215 can be implemented in software, a combination of hardware and software or hardware on the voice application platform computer.”

[Specification, page 17, lines 15-17]

An inventive feature of Appellant's independent claim 75 includes receiving a first grammar from an application, the first grammar including information representative of a first set of responses expected to be received by the application. “The command processing unit 215 is adapted for receiving input data from the application and sending responses to the application. The input data, typically includes the grammar or other representation of the acceptable responses from the user and the prompt, either in the form of a digital audio data file or a text file for TTS synthesis. The input processing unit 216 receives the input data and separates the grammar from the prompt.” **[Specification, page 20, lines 1-5]**

Another inventive feature of Appellant's independent claim 75 includes analyzing the first grammar prior to receiving the first set of responses to identify a characteristic. “The input processing unit 216 receives the input data and separates the grammar from the prompt. The grammar can be analyzed to determine specific characteristics or attributes of its content in order to enable the command processing unit 215 to determine or make assumptions about the

response that the application or web site is expecting. If the prompt is a text file for TTS synthesis, the text file can be analyzed to determine specific characteristics or attributes of the content that enable the command processing unit 215 to determine or make assumptions about the response that the application or web site is expecting.” **[Specification, page 20, lines 4-11]**

“In another example, the voice application platform can include a database of synonyms or a thesaurus and where the grammar is determined to include one or more words that are found in the database or the thesaurus, the input processing unit 216 can add the appropriate synonyms to the grammar before it is forwarded to the speech recognition unit 212 and notify the response processing unit 218 that any synonyms recognized need to be replaced with the original term (from the original grammar) prior to forwarding the response to the application or web site.”

[Specification, page 20, line 17 to page 21, line 1] Further, with reference to FIG. 3, “[i]n the illustrative embodiment, the remote application is adapted to send prompts and grammars to the voice application platform, however it is not necessary for the voice application platform to use a grammar. The process 300, in accordance with invention, includes establishing a connection with the application at step 310, either directly (such as where the application is local) or over a network, receiving input from the application at step 312. Typically, the input includes at least one prompt and one grammar. The process 300 further includes analyzing the grammar at step 314. The analyzing step 314 includes determining one or more characteristics of the response expected by the remote application in order to implement one or more modifications to the way the user can interact with the remote application. This can be accomplished by analyzing the grammar or the prompt (e.g. TTS based prompts) or both to determine the type or character of information requested by the prompt (e.g. a credit card number or expiration date) or the set of possible responses the user can input in response to the prompt (e.g. number strings and date terms).” **[Specification, page 28, line 20, to page 29, line 10]** “After the grammar has been replaced or modified, the application prompt is played to the user in step 328 and then any additional prompts are played to the user in step 330. ... After the prompts are presented to the user, the user interface waits to receive a response from the user 332. The response can be a permitted response as defined by the grammar provided by the application or a response enabled

by the voice application platform, such as a synonym, a global response or touch tone (DTMF) input.” **[Specification, page 30, line 21, to page 31, line 13]**

A further inventive feature of Appellant's independent claim 75 includes selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user. “The command processing unit 215 can further be adapted to modify the way the user can interact with the application as a function of the context of a given response. For example, where the original grammar represents a credit card number, the subsequent dialog based upon this context is expected to be either the name of the credit card holder or the expiration date of the credit card. Thus, the input processing unit 216 can set a context attribute as “credit card” upon receiving a grammar that represents the number of digits associated with a credit card. Upon receipt of a subsequent grammar that represents a date (month and year), based upon the current context attribute, the input process unit 216 can retrieve the user's expiration date from his/her profile and send it to the application with or without prompting the user to do so. Alternatively, if the original grammar represented the days of the week or months of the year, the response processing unit 218 can, in response to a user response for “help” where no help is provided by the remote application, select a help application or process that is appropriate for the context, such as explain the possible responses, for example, names of the days or months or the corresponding numbers.” **[Specification, page 25, line 12, to page 26, line 3]**

(vi.) Grounds of Rejection to be Reviewed on Appeal

Whether claims 1, 3-4, 6-11, 13, 16-17, 35, 37-44, 64-65, 69-70, 75, 77-79, 82, and 84-89 are patentable under 35 U.S.C. 103(a) over U.S. Patent No. 6,434,524 to Weber, in view of U.S. Patent No. 6,104,790 to Narayanaswami.

(vii.) Argument

Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

In *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 2007 WL 1237837 (2007), the Supreme Court reversed a decision by the Court of Appeal's for the Federal Circuit decision that reversed a summary judgment of obviousness on the ground that the district court had not adequately identified a motivation to combine two prior art references. The invention was a combination of a prior art repositionable gas pedal, with prior art electronic (rather than mechanical cable) gas pedal position sensing. The Court first rejected the "rigid" teaching suggestion motivation (TSM) requirement applied by the Federal Circuit, since the Court's obviousness decisions had all advocated a "flexible" and "functional" approach that cautioned against "granting a patent based on the combination of elements found in the prior art."

With respect to the genesis of the TSM requirement, the Court noted that although "[a]s is clear from cases such as *Adams*¹, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so

¹ *United States v. Adams*, 383 U. S. 39, 40 (1966)

because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."

In application of the TSM requirement, the Court cautioned that: "Helpful insights, however, need not become rigid and mandatory formulas; and when it is so applied, the TSM test is incompatible with our precedents." To the extent the Fed Cir has been applying a flexible rule recently, that flexible rule was not applied in this case, and the Fed Cir can figure out how to match its actions to this decision.

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

"The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

Furthermore, as explained by MPEP 2143.01.V, a *prima facie* case of obviousness cannot be established if the combination renders the prior art reference(s) being modified unsatisfactory for its intended purpose:

"If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter assembly, and wherein a gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were

at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.”

Additionally, as further explained in MPEP 2143.01.VI, a *prima facie* case of obviousness cannot be established if the combination changes the principle of operation of the prior art reference(s) being modified:

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).”

**(1) Claims 1, 13, 16-17, 35, 37-44 and 69-70 are
patentable Over the Prior Art**

For the purposes of this appeal only, claims 1, 13, 16-17, 35, 37-44 and 69-70 stand or fall together.

Claim 1 is representative of this group of claims. Claim 1 is directed to a speech recognition apparatus that includes the features of a voice application platform that includes “a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic, ... wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar.” Thus, as explained in the specification of the above-identified application, a remote first application provides to the voice application platform input data that includes grammar or other representations of acceptable responses that a user may provide (when the user interacts with the voice application platform). The voice application platform is configured to analyze the grammar (or other representations of acceptable user responses) received from the remote first application to determine characteristics or attributes of the grammar, and to modify the grammar based on characteristics/attributes of the grammar identified in the analysis of the grammar. Further, modification of the grammar precedes the receipt of user-provided input (e.g., speech input).

For the reasons that follow, Appellant contends that the Examiner's rejection of claim 1 is improper and that claim 1 is patentable over the prior art references cited by the Examiner

The prior art fails to disclose “modify the grammar based on the at least one characteristic”

The Examiner admitted that “Weber does not disclose the processor is configured to analyze the grammar prior to receiving speech input, to identify at least one characteristic of the grammar independent of prior speech input and wherein the input is not acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar” (Final Action, page 3) Indeed, Weber's system, providing for user interaction with a computer using speech recognition and natural language processes (see, for example, col. 1, lines 7-10), includes storage medium to store “context-specific grammar files 212, general grammar

file 214, dictation grammar 216, and natural language processor (NLP) databases” (col. 6, lines 21-24), used to determine if a match exist between input user's utterances and the content of the database (see, for example, FIG. 3A and col. 7). While Weber describes that the content of the databases may be updated to include new information and that the system “adaptively ‘learns’ to recognize phrases uttered by the user” (col. 12, lines 66-67), at no point does Weber describe that its system analyzes grammar received from a first application to modify that grammar based on the at least one characteristic identified during the analysis of the received grammar. Weber certainly does not disclose performing such an analysis and grammar modification prior to receiving the speech input. Weber also does not describe that speech input is determined to be an acceptable response in the modified grammar because Weber's system does not modify a grammar prior to processing the user's speech data. Rather, any updates to Weber's databases occur after speech data (utterances) have been processed.

Accordingly, as admitted by the Examiner, Weber fails to disclose or suggest at least the features of “a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic, ... wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar,” as required by Appellant's independent claim 1.

The Examiner, however, contended that Narayanaswami teaches the above features, and stated that:

Narayanaswami discloses a system for providing a voice menu for an interactive voice response system, which downloads a voice menu to a user to provide interaction with a website or system and modifies or updates the grammar in an operation that is transparent to the user (col. 4, line 55 to col. 5, line 50). It would have been obvious to one of ordinary skill at the time of the invention to modify the system of Weber to implement a system of analyzing and modifying the grammar prior to receiving speech input, as suggested by Narayanaswami, for the purpose of ensuring the user always has the most recent version of the menu that is used for a particular system. (Final Action, page 3)

Further, the Examiner stated in the September 11, 2008, Advisory Action that:

Weber does not disclose the processor is configured to analyze the grammar prior to receiving speech input, to identify at least one

characteristic of the grammar independent of prior speech input such that the input is not acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar. Narayanaswami was cited for teaching a system for providing a voice menu for an interactive voice response system, which downloads a voice menu to a user to provide interaction with a website or system and modifies or updates the grammar in an operation that is transparent to the user. Narayanaswami suggests the system can be used in a speech recognition environment, since he teaches the system 100, includes an input device 101, such as voice recognition input (col. 3, lines 20-22), and that the input 101 can be used to select menu options (col. 5, lines 59-64). The system determines if the voice menu is available or current and if not, the most current voice menu file is downloaded to the caller all prior to the user's first input and in an operation that is transparent to the user. Thereby modifying the grammar that is available to the caller producing a second grammar that is produced from modifying a first grammar. (Advisory Action, pages 2-3)

Appellant respectfully disagrees with the Examiner's contentions.

Narayanaswami describes a graphical voice response system and method which, when connection is made to a party with a recorded menu, displays an interactive graphical screen (col. 1, lines 7-10). Narayanaswami explains that in circumstances where a called number has a voice menu associated with that number, either the called party or a third party downloads an associated menu to the calling party. Narayanaswami further describes that a determination is made, through a handshaking protocol, whether the menu in question is available locally (i.e., on the calling party's phone) and is current by comparing the file versions of the menu:

Thus, the user may download the voice menu file from the Internet, intranet or other data network by accessing the called party's web site or the like. In such a case, the called party must make the voice menu file available for downloading.

A determination may be made to see whether the menu file is available locally and is current by comparing file versions. For example, along with the answer/response tone signal mentioned above, the version number may be determined in a handshaking operation between the called and calling party in establishing the communication procedure.

If the menu file is current, the local copy may be used. If the menu file is not current, the latest menu file may be transferred (e.g., from the remote called party's site, the Internet, intranet, other data network, etc. as described above). The transfer of the latest menu file may occur at the beginning of the call for use during the present call and during subsequent calls to the same number until there is another change in the menu file.

When there is another change in the menu file, the above process of retrieving the last file (e.g., most current) is repeated. (Narayanaswami, col. 5, lines 29-50)

Thus, while Narayanaswami describes that a determination of the local availability and version number of the menu (a determination which the Examiner presumably equates to an analysis of a characteristic of the grammar) prior to receipt of input (speech or otherwise) from the calling party, no modification of the menu, or any type of data, is performed based on the determination of the local availability and version number of the menu. Rather, if a menu is not available locally on a calling party's phone, or if the menu on the calling party's phone is of an older version, the new version is transferred to the calling party's phone to provide the current menu. Where the calling party has an old version, the transfer of the new version replaces the older version. However, transferring a menu to a calling party's phone is not the same as modifying, e.g., adding to a data set additional phrases or terms or substituting one or more terms or phrases for one or more other terms or phrases in the original data set. Accordingly, for this reason alone, Narayanaswami fails to disclose or suggest at least the features of "a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic," as required by Appellant's independent claim 1.

It also follows that because Narayanaswami does not disclose or suggest modifying any type of data item or set, Narayanaswami also does not disclose having speech input that would be an acceptable response in a modified menu (or other types of data). Accordingly, it follows that Narayanaswami also fails to disclose or suggest "wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar," as required by Appellant's independent claim 1.

Furthermore, as noted above, independent claim 1 requires that the processor of the voice application platform (i.e., the platform that interfaces with a user's terminals) perform the operation of analyzing the grammar to identify at least one characteristic of the grammar and modify the grammar based on the at least one characteristics. In contrast, and as explained

above, the operation performed by Narayanaswami's system vis-à-vis the availability of a local menu and/or the menu's version number and subsequent downloading of a current menu are performed using the calling party's phone:

Thus, the user may download the voice menu file from the Internet, intranet or other data network by accessing the called party's web site or the like. ...

..., the version number may be determined in a handshaking operation between the called and calling party in establishing the communication procedure. (Emphasis added, Narayanaswami, col. 5, lines 29-37)

Thus, unlike Appellant's independent claim 1, in Narayanaswami's system it is the user's phone, rather than the called party's platform (which the Examiner presumably equates to claim 1's voice application platform) that is responsible for the operations relating to determining the local availability of a voice menu and/or determining whether any such locally available menu is current. For this reason too, therefore, Narayanaswami fails to disclose or suggest at least the features of "the voice application platform including a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic," as required by Appellant's independent claim 1.

Because neither Weber nor Narayanaswami discloses or suggests at least the features of "the voice application platform including a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic," or "wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar," Appellant's claim 1 and the claims depending from it are patentable over the cited art.

No Reason to Combine Weber with Narayanaswami

Even assuming, for argument sake, Narayanaswami discloses the features the Examiner contended are disclosed in Narayanaswami, Appellant submits that in any event a person of

ordinary skill in the art would have no reason to combine the teachings of the Narayanaswami reference with the teachings of the Weber reference.

As noted above, the Examiner stated in the June 27, 2008, Final Action that:

It would have been obvious to one of ordinary skill at the time of the invention to modify the system of Weber to implement a system of analyzing and modifying the grammar prior to receiving speech input, as suggested by Narayanaswami, for the purpose of ensuring the user always has the most recent version of the menu that is used for a particular system. (Final Action, page 3)

Appellant respectfully disagrees with the Examiner's contentions.

As described above, Weber's system "adaptively 'learns' to recognize phrases uttered by the user" (col. 12, lines 66-67) and has its database, which includes context-specific grammar files 212, general grammar file 214, dictation grammar 216, and natural language processor (NLP), updated upon completion of the context-based interactive dialog to include new information (Weber, Col. 12, lines 6-63). Weber also explains that:

In order to clear up ambiguities, the natural language processor prompts the user whether the matching entry is a correct interpretation of the utterance if the required number of words from the matching phrase are not present in the matching entry. The natural language processor also prompts the user for additional information if the matching entry is not a correct interpretation of the utterance. At least one of the database, the first grammar file and the second grammar file are updated with the additional information. In this way, the present invention adaptively "learns" the meaning of additional utterances, thereby enhancing the efficiency of the user interface. (Weber, col. 3, line 64, to col. 4, line 8)

Thus, updating Weber's database is performed at the end of the interactive dialog, presumably because only then would additional utterances have been identified for inclusion into the database so that they are available for the next interactive session with the user.

Narayanaswami's system, on the other hand, determines the local availability of a menu and/or whether the menu on a user's phone is current prior to commencing an interactive communication session with a called party to ensure that the calling party is able to and can

interact with the most recent menu of the called party. To the extent that a menu on the calling party's phone is not current, the entire menu is replaced by transferring the entire menu from the called party's system or a third party's system.

To combine Narayanaswami's teaching of replacing data prior to beginning of an interactive session with Weber's system would thus render Weber unsatisfactory for its intended purpose, or would change Weber's principle of operation, because replacing data prior to the beginning of an interactive session would prevent Weber's adaptive learning that enables it to identify additional words/utterances during the session and add them to the database to make those utterances available for the next session.

Additionally, Appellant contends that no reason or rationale exist for combining the disparate technologies described in Weber and Narayanaswami, respectively. Whereas Weber is directed to a system to recognize a user's utterances and adaptively learn additional utterances to be included in its database, Narayanaswami is directed to interaction of a user with a pre-determined and limited menu. Narayanaswami makes no provisions for changing or updating such a menu on the basis of a calling party's interaction with that menu. There would therefore be no reason for the person skilled in the art to combine these two references.

Because no reason exists for combining the references cited by the Examiner, the Examiner has thus failed to establish a *prima facie* case of obviousness. For this reason too, Appellant submits that independent claim 1 is patentable over the cited art.

For the foregoing reasons, Appellant submits that independent claim 1, and the claims depending from it, are patentable over the cited art.

Independent claim 35 recites "[a] computer readable medium having computer-executable instructions for performing a method of providing a user interface comprising: ... analyzing the first grammar to identify a characteristic prior to receiving the first set of responses; modifying the first grammar as a function of the characteristic to produce a second grammar representative of a second set of responses, wherein at least a portion of the second set

of responses are not included in the first set of responses.” For reasons similar to those provided with respect to independent claim 1, at least this feature is not disclosed by the cited art. Accordingly, independent claim 35 and the claims that depend from it are patentable over the cited art.

**(2) Claims 3, 4, 6-8, 10-11 and 64 are patentable
over the prior art**

For the purposes of this appeal only, claims 3, 4, 6-8, 10-11 and 64 stand or fall together.

Appellant's claim 3, which depends from independent claim 1, recites the features of “wherein the at least one characteristic is indicative that the grammar includes a set of terms and that the modified grammar includes at least one additional term not included in the grammar.” Thus, the at least one characteristic identified, based upon which the grammar is modified, is a characteristic that is indicative that the grammar (being analyzed) includes a set of terms. In other words, if the grammar includes terms (e.g., possible responses by the user interacting with the voice application platform), the platform's processor will identify that characteristic and will cause modification of the grammar to include additional terms not included in the received grammar.

The Examiner rejected claim 3 as obvious over Weber in view of Narayanaswami, stating:

Regarding claims 3 and 64-65, the combination of Weber and Narayanaswami discloses characteristic is indicative that said first unit of input information includes a set of terms and said first unit of input information is modified to produce said modified first unit of input information that includes at least one additional term not included in said first unit of input information (col. 8, lines 38-41; col. 9, lines 8-17; col. 9, lines 42-63; col. 12, lines 51-67). (Final Action, page 3)

(It is assumed that the above pin-point references refer to passages in Weber.)

The Examiner's contentions regarding Weber's and/or Narayanaswami's are incorrect.

As noted above, by the Examiner's own admission, Weber does not disclose or suggest a platform with a processor configured to analyze the grammar prior to receiving speech input and

to identify at least one characteristic of the grammar independent of prior speech input (Final Action, page 3). As was also explained above, Weber's database, which includes utterances a user may make, is updated upon completion of an interactive dialog (Weber, col. 12, lines 6-63). Weber, therefore, does not identify in the database, before or after completion of the interactive session, any type of characteristic (including a characteristic indicative that the grammar includes terms) because such an analysis is not necessary given that no modification of the grammar based on such an identified characteristic takes place. Therefore, because Weber fails to disclose or suggest identifying at least one characteristic of the grammar, it follows that Weber also fails to disclose or suggest "wherein the at least one characteristic [identified in the grammar] is indicative that the grammar includes a set of terms and that the modified grammar includes at least one additional term not included in the grammar," as required by Appellant's claim 3.

As for Narayanaswami, as explained above, Narayanaswami's system determines whether a menu is available on a calling party's phone and the version number of a menu. Narayanaswami's system does not operate to identify, with respect to the menu, a characteristic indicative that the menu (which the Examiner appears to have equated to the grammar) includes a set of terms. Accordingly, Narayanaswami also fails to disclose or suggest at least the features of "wherein the at least one characteristic [identified in the grammar] is indicative that the grammar includes a set of terms and that the modified grammar includes at least one additional term not included in the grammar," as required by Appellant's claim 3.

Because neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features of "wherein the at least one characteristic [identified in the grammar] is indicative that the grammar includes a set of terms and that the modified grammar includes at least one additional term not included in the grammar," claim 3, and the claims depending from it, are patentable over the cited art.

(3) Claim 9 is patentable over the prior art

Appellant's claim 9, which depends from claim 8 (which in turn depend from claim 3 that depends from claim 1), recites the features of "wherein the first function is further adapted for

substituting the at least one term in the set of terms for the at least one additional term in the user selection.”

The Examiner rejected claim 9 as obvious over Weber in view of Narayanaswami, stating:

Regarding claim 9, the combination of Weber and Narayanaswami discloses first function is further adapted for substituting said at least one term in said set of terms for said at least one additional term in a response to be sent to said application (col. 8, lines 38-41; col. 9, lines 8-17; col. 9, lines 42-63; col. 12, lines 51-67). (Final Action, page 4)

(It is assumed that the above pin-point references refer to passages in Weber.)

The Examiner's contentions regarding Weber's and/or Narayanaswami's are incorrect.

As explained, Weber describes that the content of the databases may be updated to include new information and that Weber's system “adaptively ‘learns’ to recognize phrases uttered by the user” (col. 12, lines 66-67). However, while such newly learned information is included in the database, Weber does not describe that learned information is substituted (i.e., replaced) for previously existing information. Although Weber indicates that in searching the NLP database “certain “word-variables” are replaced with an associated wildcard function by variable replacer 204 in preparation for accessing the NLP database 218” (Weber, col. 9, lines 42-45), Weber does not describe that the database content itself is substituted by replacement terms or content. Accordingly, Weber fails to disclose or suggest at least the features “wherein the first function is further adapted for substituting the at least one term in the set of terms for the at least one additional term in the user selection,” as required by Appellant's claim 9.

As for Narayanaswami, although a current version of a menu may replace an older version of the menu on a calling party's phone, Narayanaswami does not describe that individual substitution of terms in a grammar (or any data set) is performed on Narayanaswami's system. Accordingly, Narayanaswami too fails to disclose or suggest at least the features of “wherein the first function is further adapted for substituting the at least one term in the set of terms for the at least one additional term in the user selection,” as required by Appellant's claim 9.

Because neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features of “wherein the first function is further adapted for substituting the at least one term in the set of terms for the at least one additional term in the user selection,” claim 9 is patentable over the cited art.

(4) Claim 65 is patentable over the prior art

Claim 65 is directed to the apparatus of claim 3 and recites that “wherein the set of terms is selected from the group including days of the week, months of the year and years.”

The Examiner stated, with respect to claim 65 “[r]egarding claims 3 and 64-65, the combination of Weber and Narayanaswami discloses characteristic is indicative that said first unit of input information includes a set of terms and said first unit of input information is modified to produce said modified first unit of input information that includes at least one additional term not included in said first unit of input information (col. 8, lines 38-41; col. 9, lines 8-17; col. 9, lines 42-63; col. 12, lines 51-67).”

Appellant contends that neither Weber nor Narayanaswami makes any mention, in any way, that the set of terms (provided by the first application) includes days of the week, months or years. Neither Weber nor Narayanaswami even mentions these terms. Accordingly, neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features “wherein the set of terms is selected from the group including days of the week, months of the year and years,” as required by Appellant’s claim 65. For at least this reason, Appellant’s claim 65 is therefore patentable over the cited art.

(5) Claim 75, 82, 84-86 and 88-89 are patentable over the prior art

For the purposes of this appeal only, claim 75, 82, 84-86 and 88-89 stand or fall together.

Claim 75 is representative of this group of claims. Claim 75 is directed to a computer readable medium with instructions to perform a method of providing a user interface that

includes "receiving a first grammar from an application, the first grammar including information representative of a first set of responses expected to be received by the application; analyzing the first grammar prior to receiving the first set of responses to identify a characteristic; selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user."

As explained in the specification of the above-identified application, a remote application provides to a voice application platform input data that includes grammar or other representations of acceptable responses that a user may provide (when the user interacts with the voice application platform). The grammar (or other representations of acceptable user responses) is analyzed, before receiving the first set of response, to identify or determine characteristics or attributes of the grammar. Based on the identified characteristic, a response can be selected and sent to the application (that provided the grammar), without receiving input from the user. For example, in some embodiments, if it is determined that the received grammar represents the number of digits associated with a credit card, thus determining that information relating to credit card is required, other information relating to the credit card, such as the expiration date of a user's credit card, can be forwarded to the application that sent the grammar without directly soliciting the user to provide that information:

"The command processing unit 215 can further be adapted to modify the way the user can interact with the application as a function of the context of a given response. For example, where the original grammar represents a credit card number, the subsequent dialog based upon this context is expected to be either the name of the credit card holder or the expiration date of the credit card. Thus, the input processing unit 216 can set a context attribute as "credit card" upon receiving a grammar that represents the number of digits associated with a credit card. Upon receipt of a subsequent grammar that represents a date (month and year), based upon the current context attribute, the input process unit 216 can retrieve the user's expiration date from his/her profile and send it to the application with or without prompting the user to do so. Alternatively, if the original grammar represented the days of the week or months of the year, the response processing unit 218 can, in response to a user response for "help" where no help is provided by the remote application, select a help application or process that is appropriate for the context, such as explain the possible responses, for example, names of the days or months or the corresponding numbers." (Specification, page 25, line 12, to page 26, line 3)

And also:

The system according to the invention can also send the user's credit card number and/or expiration date automatically to the remote application, without playing the prompts to the user. In this example, the grammar is not forwarded to the speech recognition unit and no user response is recognized. Alternatively, the grammar can be modified to remove the number digits and/or date words, but allow navigation and control commands like "stop," "quit," or "cancel," thereby allowing the user to further navigate or terminate the session with the remote application. (Specification, page 27, lines-7-12)

Thus, an appropriate response that is based on the received grammar can be determined without requiring a user's input.

With respect to independent claim 75, the Examiner stated that "[r]egarding claims 35,37-44,75,77-79, 82, and 84-89: claims 35,37-44,75,77-79, 82, and 84-89 are similar in scope and content to claims 1, 3-4, 6-11, 13, 16-17, 64-65, and 69-70 and are therefore rejected under similar rationale," but did not otherwise explain how Weber and/or Narayanaswami disclose the features of Appellant's independent claim 75.

As explained above, and as also admitted by Examiner, Weber fails to disclose or suggest at least the features of "receiving a first grammar from an application, the first grammar including information representative of a first set of responses expected to be received by the application; analyzing the first grammar prior to receiving the first set of responses to identify a characteristic." While Weber describes that the content of the databases may be updated after completion of an interactive dialog to include new information and that its system "adaptively 'learns' to recognize phrases uttered by the user" (col. 12, lines 60-67), Weber does not describe that its system analyzes a grammar to identify a characteristic prior to receiving a response from the user. Furthermore, Weber does not disclose anywhere that a received grammar is analyzed, before or after receiving input from a user, to select a response to be sent to the remote application that is a function of the characteristic identified during the analysis performed on the grammar prior to receiving a set of responses from the user. Weber certainly does not describe that such a response is selected without receiving input from the user. There is nothing in Weber to suggest that Weber's system automatically determines appropriate response without requiring

a user's input. Accordingly, Weber fails to disclose or suggest at least the features "selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user," as required by Appellant's independent claim 75.

As for Narayanaswami, while Narayanaswami describes that a determination of the local availability and version number of the menu is performed prior to receipt of input (speech or otherwise) from the calling party, Narayanaswami does not describe that any determination is performed on the received menu (or any other remotely transmitted data) to identify a characteristic that is used to select a response as a function of the identified characteristic without receiving input from a user. Accordingly, Narayanaswami too fails to disclose or suggest at least the features "selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user," as required by Appellant's independent claim 75.

Because neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features of "selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user," for at least this reason Appellant's independent claim 75, and the claims depending from it are patentable over the cited art.

Additionally, for reasons similar to those provided with respect to independent claim 1, independent claim 75, and the claims depending from it, are also patentable over the cited art because a person of ordinary skill in the art would have no reason to combine Weber with Narayanaswami.

(6) Claims 77-78 is patentable over the prior art

For the purposes of this appeal only, claims 77-79 stand or fall together.

Claim 77 is representative of this group of claims. Claim 77 recites the features, similar to the features recited in claim 3, that “wherein the characteristic [identified in the first grammar] is indicative that the first grammar includes a set of terms.”

For reason similar to those provided with respect to claim 3, Appellant contends that the prior art fails to disclose or suggest at least these features.

Particularly, as was also explained above in relation to claim 3, Weber's database, which includes utterances a user may make, is updated upon completion of an interactive dialog (Weber, col. 12, lines 6-63). Weber does not identify in the database any type of characteristic (including a characteristic indicative that the grammar includes terms) because such an analysis is not necessary given that no modification of the grammar based on such an identified characteristic takes place. Therefore, because Weber fails to disclose or suggest identifying at least one characteristic of the grammar, it follows that it also fails to disclose or suggest “wherein the characteristic [identified in the first grammar] is indicative that the first grammar includes a set of terms,” as required by Appellant's claim 77.

As for Narayanaswami, as explained above, Narayanaswami's system determines whether a menu is available on a calling party's phone and the version number of a menu. Narayanaswami's system does not identify, with respect to the menu, a characteristic indicative that the menu includes a set of terms. Accordingly, Narayanaswami too fails to disclose or suggest at least the features of “wherein the characteristic [identified in the first grammar] is indicative that the first grammar includes a set of terms,” as required by Appellant's claim 77.

Because neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features of “wherein the characteristic [identified in the first grammar] is indicative that the first grammar includes a set of terms,” Appellant's claim 77, and the claims depending from it, are therefore patentable over the cited art.

(7) Claim 79 is patentable over the prior art

Claim 79 depends from claim 77 and recites that “wherein the set of terms is selected from the group including days of the week, months of the year and years.”

For reason similar to those provided with respect to claim 65, Appellant contends that the prior art fails to disclose or suggest at least these features.

Particularly, as was also explained above in relation to claim 65, neither Weber nor Narayanaswami mentions in any way that the set of terms (provided by a first application) includes days of the week, months or year. Neither Weber nor Narayanaswami even mentions these terms. Accordingly, neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features "wherein the set of terms is selected from the group including days of the week, months of the year and years," as required by Appellant's claim 79. For at least this reason, Appellant's claim 79 is therefore patentable over the cited art.

(8) Claim 87 is patentable over the prior art

Claim 87 depends from claim 75 and recites "wherein selecting a response to be sent to the application as a function of the characteristic includes selecting a predefined response stored in a memory storage device."

As explained above in relation to claim 75, Weber does not disclose anywhere that a received grammar is analyzed to select a response to be sent to the remote application that is a function of the characteristic identified during the analysis performed on the grammar prior to receiving a set of responses from the user, and certainly does not disclose that such a response is a predefined response stored in memory. As noted, there is nothing in Weber to suggest that Weber's system automatically determines appropriate response, including appropriate predefined responses stored in memory, without requiring a user's input. Accordingly, Weber fails to disclose or suggest at least the features "wherein selecting a response to be sent to the application as a function of the characteristic includes selecting a predefined response stored in a memory storage device," as required by Appellant's independent claim 87.

As for Narayanaswami, as also explained above in relation to claim 75, Narayanaswami does not describe that any determination is performed on the received menu (or any other remotely transmitted data) to identify a characteristic that is used to select a response, and certainly not a predefined response stored in memory, as a function of the identified

characteristic without receiving input from a user. Accordingly, Narayanaswami too fails to disclose or suggest at least the features "wherein selecting a response to be sent to the application as a function of the characteristic includes selecting a predefined response stored in a memory storage device," as required by Appellant's independent claim 87.

Because neither Weber nor Narayanaswami discloses or suggests, alone or in combination, at least the features of "wherein selecting a response to be sent to the application as a function of the characteristic includes selecting a predefined response stored in a memory storage device," for at least this reason Appellant's independent claim 87 is therefore patentable over the cited art.

Conclusion

For the foregoing reasons, Appellant submits that claims 1, 3, 4, 6-11, 13, 16, 17, 35, 37-44, 64, 65, 69, 70, 75, 77-79, 82 and 84-89 are allowable. Therefore, the Examiner erred in rejecting Appellant's claims and should be reversed.

Respectfully submitted,



Ido Rabinovitch
Reg. No. L0080
Attorney for Applicants
c/o Mintz, Levin
One Financial Center
Boston, MA 02111
Telephone 617/ 348-3022

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(viii) Claims Appendix

1. A speech recognition apparatus comprising:

a first application configured to output a grammar in a form to be used by a speech recognizer, and to receive a user selection associated with the grammar; and

a voice application platform adapted to receive a speech input and to receive the grammar from the first application, and to output the user selection to the first application, the voice application platform including a processor configured to analyze the grammar prior to receiving the speech input, to identify at least one characteristic of the grammar independent of prior speech input, and to modify the grammar based on the at least one characteristic, and a speech recognizer coupled to the processor and configured to interpret the speech input as a function of the modified grammar, and to produce the user selection, wherein the speech input is not an acceptable response in the grammar received from the first application, but is an acceptable response in the modified grammar.

2. (Canceled)

3. The apparatus according to claim 1 wherein the at least one characteristic is indicative that the grammar includes a set of terms and that the modified grammar includes at least one additional term not included in the grammar.

4. The apparatus according to claim 3 wherein the at least one additional term is a synonym of at least one term in the set of terms.

5. (Canceled)

6. The apparatus according to claim 3 wherein the at least one additional term is associated with a first function that can be performed when the processor produces the modified grammar.

7. The apparatus according to claim 3 wherein the set of terms is representative of a set of responses expected to be received by the first application and the at least one additional term is a synonym of at least one term in the set of terms.

8. The apparatus according to claim 3 wherein the set of terms is representative of a set of responses expected to be received by the first application and the at least one additional term is associated with a first function that can be performed when the processor produces the modified grammar, whereby the user selection includes the at least one term in the set of terms.

9. The apparatus according to claim 8 wherein the first function is further adapted for substituting the at least one term in the set of terms for the at least one additional term in the user selection.

10. The apparatus according to claim 3 wherein the set of terms is representative of a set of responses expected to be received by the first application and the at least one additional term is associated with a first function that can be performed when the processor produces the modified grammar, whereby the first function is adapted to modify the user selection to include a term selected from a memory as a function of the speech input received by the voice application platform.

11. The apparatus according to claim 10 wherein the term selected from a memory is associated with a user of the voice application platform.

12. (Canceled)

13. The apparatus according to claim 1 wherein the grammar is associated with a first speech recognizer based upon a first speech recognition paradigm and the modified grammar is associated with a second speech recognizer based upon a second speech recognition paradigm which is different from the first speech recognition paradigm.

14-15. (Canceled)

16. The apparatus according to claim 1 further comprising a prompt synthesizer adapted for receiving information representative of a prompt, and wherein the grammar includes information

representative of a prompt and the processor receives the information representative of a prompt and the processor is configured to produce the modified grammar based on the information representative of a prompt.

17. The apparatus according to claim 1 further comprising a prompt synthesizer adapted for receiving information representative of a prompt, and wherein information representative of a first prompt is received from the first application and the voice application platform is configured to present the first prompt to the user.

18. - 34. (Canceled)

35. A computer readable medium having computer-executable instructions for performing a method of providing a user interface comprising:

receiving a first grammar in a form to be used by a speech recognizer from an application, the first grammar including information representative of a first set of responses expected to be received by the application;

analyzing the first grammar to identify a characteristic prior to receiving the first set of responses;

modifying the first grammar as a function of the characteristic to produce a second grammar representative of a second set of responses, wherein at least a portion of the second set of responses are not included in the first set of responses; and

interpreting a user's voice input based on the second grammar.

36. (Canceled)

37. The method according to claim 35 wherein the first set of responses represented by the first grammar is a subset of the second set of response represented by the second grammar.

38. The method according to claim 35 wherein the second set of responses represented by the second grammar includes at least one response that is not included in the first set of response represented by the first grammar.

39. The method according to claim 35 wherein the first set of responses represented by the first grammar and the second set of response represented by the second grammar have a subset of common responses.

40. The method according to claim 35 wherein the first grammar is representative of responses expected by the application and the second grammar is representative of a second set of responses that includes at least one response that is a synonym of at least one response in said first set of responses.

41. The method according to claim 35 wherein the first grammar is representative of responses expected by the application and the second grammar is representative of a second set of responses that includes at least one response that is not included in said first set of responses.

42. The method according to claim 41 further comprising:

receiving the at least one response not included in the first set of responses; and
executing a function associated with the at least one response not included in the first set of responses.

43. The method according to claim 42 further comprising:

producing a resulting response including a response from the first set of responses; and
sending the resulting response to the application.

44. The method according to claim 35 wherein the first grammar includes a first grammar type associated with a first speech recognizer based upon a first speech recognition paradigm and is modified to produce the second grammar which includes a second grammar type associated with a second speech recognizer based upon a second speech recognition paradigm which is different from the first speech recognition paradigm.

45. - 63. (Canceled)

64. The apparatus according to claim 3 wherein the set of terms is representative of a numeric value.

65. The apparatus according to claim 3 wherein the set of terms is selected from the group including days of the week, months of the year and years.

66. - 68. (Canceled)

69. The apparatus according to claim 1 further including a prompt generator configured to generate a prompt, wherein the grammar includes information representative of a first prompt and the processor is configured to modify the first prompt to create a second prompt, and the speech recognizer is configured to interpret the speech input as a function of the second prompt .

70. The apparatus according to claim 69 wherein the grammar includes information representative of an account number, the at least one characteristic is an account number, and the second prompt represents a query asking for authorization to include the account number in the user selection .

71. - 74 (Canceled)

75. A computer readable medium having computer-executable instructions for performing a method of providing a user interface comprising:

receiving a first grammar from an application, the first grammar including information representative of a first set of responses expected to be received by the application;

analyzing the first grammar prior to receiving the first set of responses to identify a characteristic;

selecting a response to be sent to the application as a function of the characteristic, wherein the selected response is sent to the application without receiving input from a user.

76. (Canceled)

77. The method according to claim 75 wherein the characteristic is indicative that the first grammar includes a set of terms.

78. The method according to claim 77 wherein the set of terms is representative of a numeric value.

79. The method according to claim 77 wherein the set of terms is selected from the group including days of the week, months of the year and years.

80.-81. (Canceled)

82. The method according to claim 75 wherein the first grammar includes information representative of a prompt.

83. (Canceled)

84. The method according to claim 75 wherein the first grammar includes information representative of a first prompt and the method further comprises selecting a second prompt as a function of the characteristic and presenting the second prompt to the user.

85. The method according to claim 84 further comprising presenting the first prompt to the user.

86. The method according to claim 85 wherein the first grammar includes information representative of an account number, the response is a user account number, and the second prompt is a query asking the user for authorization to include the user account number in the response.

87. The method according to claim 75 wherein selecting a response to be sent to the application as a function of the characteristic includes selecting a predefined response stored in a memory storage device.

88. The method according to claim 75 wherein the selected response is associated with a user of the user interface.

89. The method according to claim 75 further comprising receiving a second grammar from the application, analyzing the second grammar to identify a second characteristic, and selecting a second response to send to the application as a function of the second characteristic.

90.-133. (Canceled)

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(ix) Evidence Appendix

None

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(x) Related Proceedings Appendix

None

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